Social capital and participatory management in the Pátzcuaro basin

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Setting out from a survey of the theoretical postulates of social capital, the present paper analyses the utility and scope of this approach for generating solutions that can reverse environmentally harmful processes by activating and empowering existing social capital in different communities and social groups. For this purpose, it takes the socio-environmental situation in the Lake Pátzcuaro basin as its empirical referent and explores the social and political developments now holding out the promise of a revival of social capital in the area, the processes whereby significant changes might be triggered as a result of social capital, and the potential and limitations of what an outside agency can achieve.

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I
Introduction

In Latin America, the relationship between the State and local communities is seriously impaired by the current weakness of civil society and by problems such as corruption (Peña and Solanes, 2003). According to Hooper (2001), notwithstanding these difficulties and people's lack of confidence in their governments, it is possible to create communities that are committed to their region's future through a combination of motivated leadership and face-to-face networking.

In this context, the theoretical debate about social capital (which encompasses a large number of issues relating to the interaction of the State and civil society) has become a new touchstone for the analysis of problems such as poverty, social participation and rural development, the idea being that practical solutions can be arrived at by empowering social capital in different groups or communities. In addition, we believe this can be a useful approach to the analysis of integrated river basin management.

In view of the above, this paper uses the socio-environmental situation in the Lake Pátzcuaro basin as an empirical case study to consider two questions. What new basis can be found for a real environmental recovery in the area that enhances quality of life and economic growth without affecting the survival and reproduction of natural resources? And what can an outside agency do to strengthen participation by sectors that are currently in a subordinate position?

To answer these questions, we first review some relevant aspects of social capital theory. Second, we analyse the situation in the basin, the work of social actors and the prospects for constructing, reconstructing or enhancing social capital in the area. Third, we discuss some signs of improvement in the situation.

II
The social capital debate

Social capital is not a recipe, or even an agreed theoretical framework, but an ongoing cross-disciplinary, holistic debate[1] in which economists, sociologists, anthropologists and political scientists participate using the same language. As this debate has progressed, it has become necessary to re-evaluate some established ideas about social behaviour.

1. What is social capital, and how does it work?

There is a fairly broad consensus that people and groups are actors, agents or subjects who try to implement life plans and projects with different objectives and who mobilize assets to realize their strategies, including intangible assets such as social capital (Bebbington, 2005). Adler-Lomnitz (2003 and 1998, respectively) has shown the importance of asset mobilization by deprived groups for the purposes of survival, and by the Chilean middle class for the purposes of favour-seeking; in both cases, the formation or existence of exchange networks is vital. The mechanisms she identifies unquestionably have a close connection with the different forms of social capital, and with the mobility strategies of social actors.

Of the many different views of social capital, the one we adopt here is the selective approach of ECLAC: social capital is the content of social relationships and social institutions, based on diffuse reciprocity and characterized by repeated cooperation practices that develop trust (Atria, Siles and others, 2003). In this definition, social capital is analytically separated from cultural capital, but it is understood that both are constantly modified in a permanent feedback process.

[1] Many recent documents are available on the World Bank website (www.worldbank.org) and, with a slightly different approach, the ECLAC site (www.eclac.org).

Social capital has been discussed in sociology for decades: Bourdieu and Coleman were already using the term in the 1980s, while Granovetter (1985) spoke of "strong ties and weak ties" and North (1990) developed a theory of institutions very similar in substance to what is now called social capital. The concept became fashionable in the development debate, particularly as regards the role of civil society in development, following the publication of a book (Putnam, 1993) which celebrated the role of social capital in the regionalization of public policy in certain areas of Italy.

In an article in *World Development*, Jonathan Fox asks how regional civil society thickens (Fox, 1996). In his analysis, he makes use of the social capital concept and devises another one, semi-clientelism. What interests him is to find out how small local organizations in Mexico scale up to form an active network of civic partnerships and social movements at the regional level. Our concern in the present work, however, has had to set out from a more elementary level: what can be done in regions such as Pátzcuaro where, despite a strong communitarian[2] and organizational tradition, efforts at "development" have come to little or been dissipated into programmes that represent "perks" for a system of authoritarian clientelism, turning many organizations into passive recipients of clientelist practices. The logical thing in cases like this, so common in Latin America, seems to be to reduce the scale of analysis and action rather than increasing it, in order to look at the smallest units of social capital: the links between individuals. This is a necessary first step even in a region as large and politicized as the Pátzcuaro basin, because it is interpersonal links, strengthened by principles of reciprocity, that are the driving force behind informal institutions and thence civic endeavour on a larger scale.

2. Elements, dynamics and types of social capital

Adler-Lomnitz (2003) and Mauss (1979), among other anthropologists, have shown that reciprocity, mutuality and trust are the basis of any sustained human interaction whose purpose is to initiate or strengthen social relationships. These attitudes imply an obligation to repay and be available for the other party (the partner) in future, without this requiring the keeping of accounts. The basis for this is the "dyadic contract", a concept developed by the anthropologist George Foster after several years spent studying the Pátzcuaro area (Foster, 1963). The proliferation of dyadic contracts generates ego-centred networks in which the intensity of exchange depends on four factors: (i) social distance, (ii) physical distance, (iii) economic distance and (iv) psychological distance (Adler-Lomnitz, 2003). In turn, participation in these networks produces "socio-emotional goods" (Robison, Siles and Schmidt, 2003) and strengthens the ties of social capital, which accumulates with use. Repeated activation of these links leads to collective learning about the potential for cooperation and to an increase in trust, which expands the capacity for collective endeavour.

Setting out from dyadic contracts, social actors recruit allies from a pool of relatives and neighbours. In this way, groups multiply to form working partnerships, communities and regional societies with social capital. With this transformation, the possessors of social capital are no longer just two individuals but are now collective actors, or society as a whole.

In recent years, the concept of social capital has gradually been reconstructed (box 1). It not only provides access to scarce goods but, as is now recognized, is itself a scarce good. Social capital is a weapon in a socio-economic environment where competition, rivalry, conflict, betrayal and deceit are also present.

Different types of social capital are now recognized. The best-known are termed bonding, bridging and linking social capital. This threefold categorization, developed for the World Bank by Woolcock (1998), has been criticized for identifying "levels" of social capital without recognizing the existence of inequalities of power. As Fine (2001) has noted, the World Bank overlooked Bourdieu (2001), who sees the use of social capital by national elites as primarily an instrument of subordination, extortion and exclusion. It is important to avoid the romantic fallacy that social capital is always good for society as a whole. Yet it is worth having.

Different typologies have been developed for social capital (Durston, 2002; Arriagada, Miranda and Pávez, 2004), and these can be helpful for studying it empirically in specific situations. These typologies cannot be used to pigeonhole reality, however, and should be treated only as instruments of analysis to identify the different forms of social capital and analyse the potential for promoting it.

One advance in the typology of social capital has been the distinction between its horizontal and vertical

[2] We use this term to refer to residents' strong attachment to their community and their sense of belonging to it.

Box 1
DEFINITIONS OF SOCIAL CAPITAL

Robert Putnam	Social capital refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions (Putnam, 1993).
James Coleman	It is not a single entity, but a variety of entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure (Coleman, 1990).
Pierre Bourdieu	Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition —or in other words, to membership in a group— which provides each of its members with the backing of the collectivity-owned capital, a "credential" which entitles them to credit, in the various senses of the word (Bourdieu, 1986).
Francis Fukuyama	"Social capital can be defined simply as a set of informal values or norms shared among members of a group that permits cooperation among them" (Fukuyama, 2000).
World Bank	Social capital refers to the norms and networks that enable collective action. Increasing evidence shows that social cohesion —social capital— is critical for poverty alleviation and sustainable human and economic development. (Available at http://www1.worldbank.org/prem/poverty/scapital/).
John Durston	"By social capital will be meant the content of certain social structures and relationships… attitudes of trust found in combination with reciprocal and cooperative behaviour" (Durston, 2002).

Source: prepared by the authors on the basis of the bibliography cited.

forms. Strictly speaking there is no such thing as purely horizontal relationships, since even in poor families and communities there are large differences in the degree of control exercised over the social relationships of their members. All social relationships are to some extent vertical and asymmetrical. The expression "horizontal social capital" is an abbreviated way of referring to links within a single social stratum, and the expression "vertical social capital" refers to links between strata, classes or castes, or between "patricians" and "plebeians".

It was Foster (1963) once again who pointed out that an important form of the dyadic contract is the patron-client relationship, exemplified in the patron saint of the community, who grants favours and receives tribute. Indeed, the socio-religious offices of the brotherhoods that sponsor the festivals of the patron saints of neighbourhoods and communities in the Pátzcuaro region illustrate how the social capital approach demands a reappraisal of established theories (in this case, Foster's and others'). The prevailing view among analysts is still that expenditure on festivals acts as a mechanism for levelling wealth and social position by requiring a greater input of money and time from men who have initiated an accumulation process.

From the social capital point of view, it would seem instead that the time and money that go into these apparently unproductive activities act as investments in prestige and in diffuse reciprocity, which subsequently yield not only a social fabric of reciprocities that are strengthened by their activation, along with prestige for the brotherhood, but also individual economic benefits. The expenditure associated with these offices does not reduce those making them to the general level of poverty, as these critics argue. While the (economic) capital of these people is depleted during the year following their sponsorship of a civic religious event, in the long run their prestige and material circumstances are improved as a result of greater trust, the ability to mobilize labour and the opportunity to call on partners for assistance.

The networks of kinship activated to organize a festival are the main basis for the accumulation of material and social capital. These networks are now

also being activated to facilitate migration, and the saving carried out through them is reinvested by some communities in great religious festivals.[3] We should not forget that in incurring these large expenses, returning emigrants are also actuated by the desire to honour profoundly religious promises which the brotherhoods sincerely regard as the saint's due.

Despite the pressures of capitalism, clientelism and emigration, these practices are elements of collective social capital that are still present in a "subsumed" form (Salazar, 2001) and that can be recovered from the social memory and activated in new group, community or inter-community projects. There is, then, a permanent interplay between individual and collective social capital. As well as pairs of partners, people tend to form groups with leaders, and these are the basis for enterprise and community. The structures and forms of cooperation of these social institutions are themselves resources for undertaking larger-scale ventures, i.e., they are forms of collective social capital.

Although the social capital debate has moved forward, Bebbington (2005) stresses the "silences" and the new areas of thinking about social capital: women, income and power. The following observations may be made about these:

(i) *Social capital and women*. In Latin America, women are no longer deprived of a voice. On the contrary, they represent one of the few social movements active today. In the Pátzcuaro area, they have shown themselves able to operate in the gaps left by the emigration of men. As Mercedes González de la Rocha (2005) warns, however, women playing a helpful leadership role act as free labour for many State programmes that take advantage of their social capital even when they themselves are living in conditions of extreme poverty.

(ii) *Social capital and income*. Putnam (1993) made it fashionable to concentrate on the "civilness" of social capital. Recent studies like Berdegué's (2001), however, analyse the ways in which peasant social capital makes it easier to "cooperate to compete" in partnerships, yielding higher incomes.

(iii) *Social capital and power*. Power is missing from the conservative view of social capital and from that of the World Bank, where Bebbington worked. It also tends to be missing from the theory and practice of anti-poverty programmes, where the idea of class conflict is absent for political reasons.

3. Social capital mobility strategies

Those who have drawn upon the postulates of social capital theory and used this concept as an instrument for conducting community development or anti-poverty programmes argue that social capital presents two dimensions whereby groups or communities can attain their common objectives: (i) a group's specific capacity to mobilize particular resources, and (ii) the availability of networks of social relationships.

In both dimensions, mobilization capacity is expressed through two different concepts, leadership and empowerment, and accordingly two strategies (which are not mutually exclusive) have been identified for developing a group's social capital:

(i) *Associativity strategy*, in which group actions are aimed at strengthening the system of networks in which group members participate so that their ties are enhanced by new relationships. Here, links with other groups are viewed as a cooperation and alliance strategy which, in the words of Atria (2003), "is based on the development of social capital such that a situation in which internal networks predominate gives way to one in which networks external to the group predominate".

(ii) *Mobilization strategy*, which is based on the development of social capital such that a situation in which leadership in the group predominates gives way to one in which leadership for the group predominates. Atria (2003) treats this as an empowerment strategy, since the influence exerted within the group by some of its members is transformed into a type of organization that enables the group to act on its environment in respect of other groups.

These strategies are not detached from the bureaucratic machinery used to implement programmes; on the contrary, there are bureaucratic networks that make it easier or harder to obtain results, since "programmes are embedded in social relationships. In the language of social capital, this means that development agencies and public agents project bureaucratic networks on to the community level. These social relationships in turn influence their capabilities and way of acting" (Arriagada, Miranda and Pávez, 2004).

[3] For example, documented information exists on migrant networks in Oaxaca and Michoacán. Important examples of these are the Frente Indígena Oaxaqueño Binacional (FIOB) and the Federación de Clubes Michoacanos in Illinois.

The orientation of each programme will also be influenced by the way it approaches the problems it is meant to resolve and the outlook of those designing and implementing it, since: "It is the day-to-day attitudes and practices of these agents that will determine whether a public programme succeeds in creating ties of trust between government and citizen; and these agents' social networks are crucial in determining how the benefits of these programmes are spread locally. Accordingly, there needs to be quite a nuanced understanding of the way linking social capital (that which links citizens to external agents) is created and maintained, and thus of who actually does or does not have this kind of social capital" (Arriagada, Miranda and Pávez, 2004).

In view of all the above, it is safe to say that the social capital approach contains a number of ideas that have useful and important implications for the way integrated water management has traditionally been approached:

— It provides an understanding of social organization that goes beyond formal canons, i.e., simply as aggregations of individuals whose function is to support government programmes.
— There is no need to establish a special agency to participate in measures for reclaiming a geographical zone (such as a drainage basin or region), since participation and organization will be guided by the convergence of interests and mutual benefits.
— "Investment" in social capital, therefore, can generate much greater results than traditional social participation, which is why "changes in the structure of social relationships can have significant effects on the distribution of power and on a range of other resources" (Bebbington, 2005).
— The "structure of these social relationships affects the functioning of both public institutions and economic institutions (markets, etc.), which means that changes in social relationships can lead to changes in the working of these institutions" (Bebbington, 2005).

4. What can outside agencies do to increase grass-roots social capital for participatory planning purposes?

Given all that has been said, the time has come to ask whether social capital is a sufficient condition for local or community development. The answer is no, for it must be remembered that while relationships are important for local development, so is physical and financial capital (Trigilia, 2003). The question, then, is what outside agencies can do to increase social capital and orient it towards a form of participation that can help to reverse environmental damage, as in the present case.

The ideal thing for stimulating the accumulation of social capital would be a basin authority with regulations, power, resources and the ability to provide benefits. There is no such formal authority in Pátzcuaro, however, and efforts to repair damaged social capital cannot be put off until one is established. Indeed, such efforts may be a first step towards creating social demand for the legal establishment of a basin management agency.

It is illusory to think that politicization can be avoided. The strategy proposed by ECLAC[4] is to stimulate rapid transitions in the socio-political system of the territory, viewed as a complex adaptive system emerging from the combined evolution of the strategies of all actors, rather like an ecosystem. To achieve this, an outside agency needs to carry out a number of strategic actions:

— Scale down to scale up: it is essential for promoters to remain in place when they are in a position to provide immediate benefits in return for repeated cooperative efforts to regenerate trust that has been damaged at the microlocal level; this is the starting point for efforts to encourage the reappearance of autonomous grass-roots social actors in the municipal and State system.
— Support emerging grass-roots actors who might be co-opted or eliminated by authoritarian clientelist actors.
— Intervene in the municipal territorial system. Community organization and the agency promoting collective social capital are two new actors in the system whose sudden appearance results in co-evolving strategies and a systemic shock. They secure allies, among which, ideally, are the municipal president and reformist factions within established parties.

Contrary to Putnam's (1993) view of a dual equilibrium model, societies do not tend to stabilize at extreme (high or low) levels of social capital, but can rapidly change course as a result of these complex dynamics.

[4] See the ECLAC website (www.eclac.org) for numerous documents on the subject.

III

The Pátzcuaro basin and social capital: environmental problems

The Lake Pátzcuaro basin has been the subject of extensive studies, analyses, projects, public works and programmes of various kinds, so it would be pointless to attempt a new diagnosis to add to what has already been written. In this section, therefore, we shall confine ourselves to touching on the main resources of the basin and the environmental problems affecting it. Further on, setting out from the theoretical parameters mentioned, we shall try to clarify what an outside agency such as the Mexican Institute of Water Technology (IMTA) can do to foster social capital in the area.

The basin studied includes part of the municipalities around the lake of the same name, namely Pátzcuaro, Quiroga, Erongarícuaro and Tzintzuntzan. It is estimated to contain 86 communities (77 of them rural and nine urban), with a total population of 118,733 (INEGI, 2000).

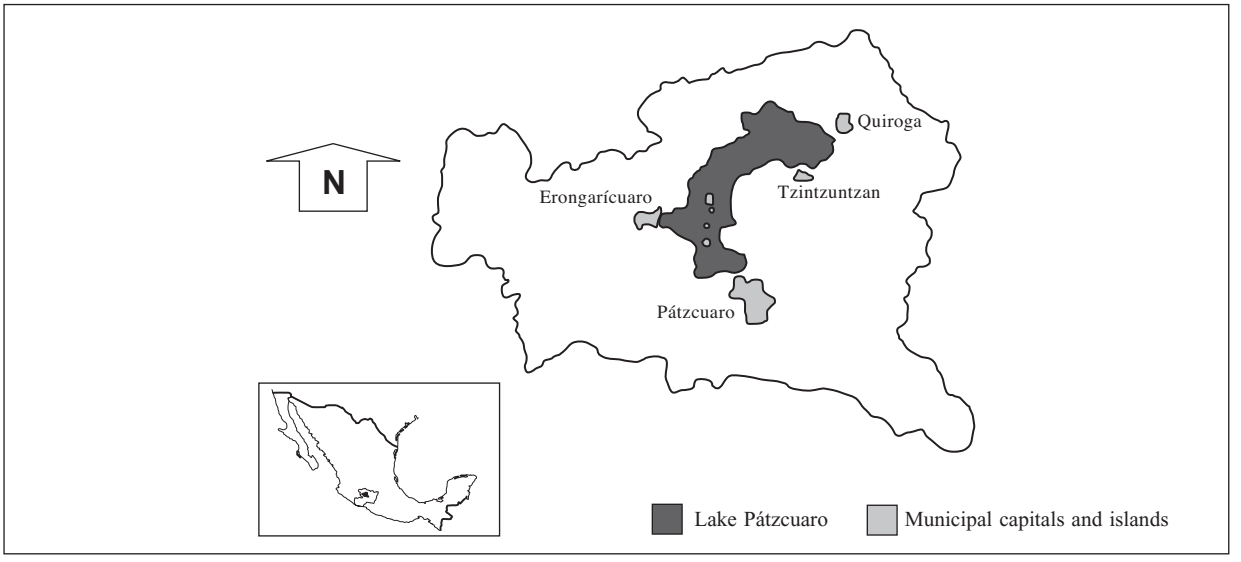
Because of its physical characteristics, the basin combines different environments in which various production activities are carried out, particularly fishing, forestry and agriculture. Over the last 25 years, deforestation, urbanization, expansion of the agricultural frontier, the declining fertility of cultivated land, erosion, sedimentation of the lake, water weeds, diminishing fish stocks and pollution of the lake by discharges of waste products have caused disturbances and instability in the basin, resulting in a lower quality of life for its inhabitants and an increase in environmental damage.

The following are some of the main environmental problems of the basin:[5]

(i) *Soil erosion*. This is caused by different factors such as slash-and-burn agriculture, extensive cattle rearing in wooded areas and land use changes

MAP 1

Mexico: Lake Pátzcuaro basin



Source: prepared by the authors.

[5] Unless otherwise stated, the information on the problems of the Lake Pátzcuaro basin summarized in the five points that follow is taken from the Atlas Cibernético de Pátzcuaro, which can be found at http://www.centrogeo.org.mx/CiberAtlas/patzcuaro/.

which, occurring on steep slopes with very light-textured soils affected by heavy rainfall and constant forest fires, have been causing rapid soil loss.

(ii) *Deforestation*. Some 32% of the basin's land area is wooded, and while not all of this is timber-yielding, it can be used for numerous purposes such as resin extraction, craftwork, firewood for household use, pottery firing, and the production of standing timber and conversion of this into wood for commercial purposes in the area's sawmills. The wooded area is estimated to have declined by almost half between 1963 and 1991 because of clandestine logging, and three out of every four cubic metres of wood going into the region's sawmills are believed to be clandestine.

(iii) *Overuse of fertilizers in agricultural areas*. About 25% of the basin's land area is used for agriculture. Fertilizer use is now prevalent, although it has not led to any significant increase in land productivity. It is estimated that between 5,000 and 10,000 tons of chemical fertilizers are applied in the basin annually. Leaching of these fertilizers into the lake not only damages the soil, but also contributes to eutrophication through overfertilization.

(iv) *Overfishing*. Non-industrial fishing is carried out on the lake, characterized by a limited scale of operations, rudimentary fishing techniques, a large number of fishermen, and low capitalization. Fishing is carried out by 24 lakeside and island communities in the municipalities around the lake, leading to overfishing of freshwater species. The Secretariat of the Environment and Natural Resources (SEMARNAT) estimates that there are 2,000 fishermen, and that 2,300 tons of fish were caught in 1989; in 1996, production was down to 634 tons (Herrera, 1999).

(v) *Sewage and sediment*. The rapid growth of towns has increased the production of sewage. In the Pátzcuaro basin there are 23 sewage outlets at various places, discharging about 222 litres a second. It is calculated, though, that 145 litres a second enter the lake because the sewage is diluted in the soil before reaching the shore owing to the lack of sewers, the agricultural use made of it before it is discharged, or the serious shortcomings of the four treatment plants in the area.[6]

IV

Indications of reviving social capital and synergy with the state government in the Pátzcuaro basin

Despite the current situation in the Pátzcuaro basin, a number of recent developments may indicate that the social capital of subordinated groups is re-emerging, in synergy with sections of the state of Michoacán, creating the conditions for environmental recovery in the basin. These indications will now be listed.

1. A state government with solid legitimacy

For the first time, the government of Michoacán is in the hands of the left-wing Partido de la Revolución Democrática or Democratic Revolution Party (PRD). Its candidate, Lázaro Cárdenas Batel, became governor of Michoacán after a sweeping electoral victory and has a legitimacy that no other party would have been likely to attain.

The situation has created an opportunity for peasant communities, "organized civil society" and many social sectors to implement inclusive projects that benefit the most vulnerable. This is suggested, at any rate, by the policy of the present government, since its main initiatives so far have concentrated on issues essential to local development such as health-care, education, the environment and agricultural development.

The state government sets out from the view that rebuilding the social fabric is an essential precondition for social and economic development. "Rebuilding

[6] Information supplied by the biologist Armando Rivas in an interview on the clean-up of Lake Pátzcuaro.

and strengthening the social fabric as a first formula of action to deal with need: properly designed and implemented, it is this approach that will enable individual members of society to take full control of their own social, political, cultural and productive lives in the medium and long term. There is no room here for clientelism or corporate control, because people who develop their own capabilities as part of the community cannot easily (or ever) be turned into a mere 'mass' to be manipulated by those with power" (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

In this policy, the strategy of the state government is to add another variable (as a resource allocation criterion) to the variable termed "greater poverty": "people's greater proclivity or potential for self-organization and organizational development, since the aim has to be to enhance the regenerative potential of the social fabric as a formula or lever for subsequent development processes. From this perspective, poor areas or regions that have greater cultural, associative and organizational density (using the concept of organization in its broadest sense) should receive critical amounts of social investment, meaning amounts: (a) that are quantitatively significant in relation to the basic purpose of the investment; (b) that have the characteristics of multi-purpose social investments with ripple effects so that their benefits spread as widely as intended; (c) that have a major organizational and management capacity-building and development component for the social actors concerned (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

2. The creation of the Intermunicipal Committee

The Intermunicipal Committee for the Pátzcuaro basin was set up in 2000 by the municipal presidents of Pátzcuaro, Erongarícuaro, Quiroga and Tzintzuntzan to improve the coordination of their work and thus avoid the dispersion of resources (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

The current state government decided to revive the Intermunicipal Committee in order to support community initiatives and be able to plan all government measures. To this end, the Interinstitutional Relations Coordinating Committee and the Secretariat of Development Planning, with support from Servicios Alternativos para la Educación y el Desarrollo A.C. (SAED), a non-profit organization supporting education and sustainable development, reviewed the situation of the municipalities and drew up a Regional Development Programme to improve environmental conservation and the development of communities in the region.[7]

The working methodology used by SAED was important for ascertaining the situation in the area and encouraging community involvement. About 100 community meetings and 92 assemblies were held, and committees of representatives were formed in places that in many cases had previously been overlooked in government planning. The work done by all these bodies was validated by themselves and translated into lines of action in the Regional Programme.

A group of community promoters was formed as a result of this work, the thinking being that involving people from the communities themselves to represent them was the best way of ensuring that programmes were understood and implemented. The promoters worked to keep the network of grass-roots participants alive. The idea was that the programme should be funded and launched once it was known who the new mayors would be (in November 2004), so that federal and state institutions would ensure the continuity of the plan.

3. Financial support from the Gonzalo Río Arronte Foundation and participation by the Mexican Institute of Water Technology

One feature of the situation which has the potential to reverse the deterioration of the basin and foster self-management processes for environmentally sound development is the presence of IMTA and the Gonzalo Río Arronte Foundation.

In February 2003, the state government of Michoacán, the municipal governments represented on the Intermunicipal Committee, the Gonzalo Río Arronte Foundation and IMTA signed a general cooperation agreement for the implementation of different environmental recovery measures in the Pátzcuaro basin.

What is new about this agreement is that it is designed to channel institutional measures to improve the environment in the basin by solving water-related issues. Given current conditions in the area, particularly the poor quality of the water in Lake Pátzcuaro, this resource has become critically important and is a focus of attention for the different social actors.

[7] See http://www.laneta.apc.org/saed.htm.

In this context, the work done earlier by the state government with support from SAED, the revival of the Intermunicipal Committee, the financial support from the Gonzalo Río Arronte Foundation and the presence of IMTA all came together to create an environment favourable to the development of social capital in different fields, thus helping to reverse the tendency towards deterioration in the basin.

4. Non-governmental organizations

Non-governmental organizations (NGOs) have become important actors. They have been working for a number of years to save natural resources in the area. The ties they have forged with one another and with basin communities have enabled them to create a network of social relationships around which bridging and linking alliances have formed, and these are unquestionably a force for the restoration and enhancement of social capital in the basin.

(a) Centro de Estudios Sociales y Ecológicos A.C. (CESE)

The roots of CESE (Centre for Social and Ecological Studies) are intertwined with the regional movement that arose in 1980-1981 to oppose the establishment of a centre for research into nuclear reactors in the indigenous community of Santa Fe de la Laguna. The institutional mission of cese is to work for a sustainable regional development process by (i) strengthening strategic social agents, (ii) designing and implementing a strategy to give civil society in the region, and particularly the poorer sectors, a greater say in public policymaking, (iii) designing an environmental education programme, and (iv) carrying out technical and social studies and research to help find specific answers to regional problems. In recent years, particular attention has been paid to environmental education measures as part of an environmental education strategy for the Pátzcuaro basin being promoted by CESE (COEECO, 2002).

(b) Organización Ribereña contra la Contaminación del Lago de Pátzcuaro (ORCA)

ORCA (Coastal Organization against the Pollution of Lake Pátzcuaro) arose out of the movement started by CESE in 1980-1981 in Santa Fe de la Laguna; its initial objective was to advise and inform local peasants about the disadvantages of building nuclear reactors. ORCA has now turned to supporting rural self-management projects, training, participatory workshops, the building of Lorena stoves (mud stoves for cooking and heating which economize on wood), and advice for fishermen. Its members are well-known in the basin and their views have great influence.

(c) Grupo Interdisciplinario de Tecnología Rural Apropiada (GIRA)

GIRA (Interdisciplinary Group for Appropriate Rural Technology) was created in 1985. Its main objectives are to research, develop and disseminate appropriate technology so that the natural resources of the countryside can be used in an efficient and socially and ecologically harmonious way; to develop green production systems based on the economical and environmentally sustainable use of local natural resources; to act as an information, demonstration, training and advisory centre; and to share, coordinate and disseminate experiences with like-minded institutions, groups and individuals. Its main sphere of action is the Purhépecha region, although it is also interested in national and international cooperation. It has researchers and professionals in the fields of agronomy, biology, ecology, physics and graphic design.

(d) Servicios Alternativos para la Educación y el Desarrollo (SAED)

SAED (Alternative Education and Development Services) is a civic partnership whose main functions include conducting environment-related technical and social research. It carries out education and social advancement work in the Meseta Purhépecha. Rather than acting like a traditional NGO, this partnership has provided consultancy services to a variety of government bodies, both in Michoacán and in other states such as Guanajuato.

5. Small rural groupings led by women

The emergence and growing strength of female social capital in rural communities is an interesting phenomenon. Local organizations led by women have recently appeared in the area and initiated measures to enhance the capabilities of their members. Drawing strength from the network of local relationships, they are acquiring a significant presence.

(a) Centro de Apoyo al Desarrollo de la Mujer Purhépecha (UARHI)

UARHI (Support Centre for the Development of Purhépecha Women) is a non-governmental

organization that works for the all-round development of women in Purhépecha. Its headquarters are in the community of Santa Fe de la Laguna and it is run by a woman, Guadalupe Hernández Dimas. Its aim is to participate in the social and productive development of women in Purhépecha and raise their awareness of the need to claim and make use of opportunities for self-development by promoting community participation and cooperation.[8]

UARHI activities include training in craft skills to improve product quality; the creation and development of production units to raise productivity and generate earnings for families; and the publicization of human rights so that women in Purhépecha are aware of their opportunities for participation and self-expression.

The head of the Centre has succeeded in forging links beyond the community level, so that she now holds a position in the state Social Development Secretariat. Her government position and her experience have enabled her to greatly expand training, women's leadership and institution-building activities and production projects.

(b) Juchari Uinapikua

Another important example is the group of 11 rural women making up the *Juchari Uinapikua* (Our Strength) organization. This organization was created in September 2001 as a result of different workshops on local problems and the role of women in the basin area. Its members carry out community work in five settlements in the basin: Cucuchuchu, Nocutzepo, Santa Ana Chapitiro, Tzentzenguaro and San Jerónimo Purenchechuaro.

The goal of this organization is to improve the quality of life of the region's women. To this end, it has been working to improve the group's handicraft production processes, find a better market and obtain higher prices for its products, so as to secure a fairer return on its members' labour.

An illustrative example is that of Herminia Domingo from the community of Cucuchuchu, who has spent several months organizing women in her community to make handicrafts and obtain better prices in the market. She has also helped women to become aware of their rights within the family and their scope for personal development.

Another interesting case is that of Odilia Molina, a woman from the community of Nocutzepo who started a public library there on her own initiative some years ago. Her efforts have been rewarded by the support of the community and she has managed to make progress both within it and further afield. As a result of her work she has forged links with young professionals from her community, including two lawyers who provide free advice and two teachers who are promoting cultural exchanges between communities. This group has emerged from the community itself and, in response to its needs, has been working on an environmental platform that includes drinking water, landfill waste disposal and reforestation. Implementation of this platform is going very slowly, however, since it has not been adopted by political parties or governmental institutions.[9]

(c) Centro de Atención y Desarrollo Cultural Colibrí

An example of the potential of social capital is provided by Tania Calderón, a young professional from the municipality of Tzintzuntzan. Several years ago, she began working voluntarily to teach reading and writing to young people who for one reason or another had not been able to carry out or complete their education in the area.

Tania began working as a volunteer within the municipality. Over time, people became interested and involved themselves with her educational project, which expanded to include a school for parents, educational videos, sex education and vocational information, among other aspects.

The results of her work impressed the municipal president of Tzintzuntzan, leading to an agreement with the state government. In addition to the adult literacy programme, the settlement now has the Centro de Atención y Desarrollo Cultural Colibrí (Colibrí Cultural Assistance and Development Centre).

Tania's efforts have had a great impact, largely because of her charisma and her ability to connect both with young people in her community and with state officials.

[8] Information available at http://www.geocities.com/paginapurepecha2002/julio02.htm.

[9] Although Odilia Molina stood in the prd primary elections as a candidate for councillor in the municipality of Erongarícuaro and won, she chose to withdraw because of party pressures.

V

From promise to results. Some conclusions

The communities of the Pátzcuaro basin and the social actors working there have a significant presence. They have managed to establish not just a large network of relationships but also various forms of social capital, some of which are difficult to define owing to the complexity of the area's social fabric.

It would not be wrong to say that the social capital of the area often reacts lethargically to the onslaught of government (both elections and programmes), only surfacing in response to some event that might affect its communities, for good or ill. Otherwise it only operates at a microsocial level, i.e., when there are festivities, harvests, misfortunes and actions that have an immediate impact on social actors.

This being so, the promise of social capital described above is no guarantee of results. For these to be reliably achieved, the first requirement is to modify the institutional system so that substantial changes benefiting the region can be brought about through the network of social actors in the basin. These modifications would have to affect at least three areas immediately:

(i) *The state government:* even though a basic premise of its programmes is the restoration of the social fabric and the participation of society to achieve their goals, they are still implemented under the old paternalistic system; consequently, they are disconnected from state politics and are unable to draw in the local capabilities of communities, non-governmental organizations or other governmental sectors. As a result, government efforts to restore the social fabric (which could be the element that reconstitutes social capital) are not progressing, and this limits the social impact of programmes. To re-establish the social fabric, it is indispensable to identify and foster networks of bureaucratic social capital and restructure the way programmes are implemented.

(ii) *The Mexican Institute of Water Technology:* for all its proven technical capacity, IMTA has not established an appropriate relationship with social actors in the area, particularly non-governmental organizations. It has been openly spurned by the latter for having ignored the accumulated environmental knowledge of communities and their considered views on the successes and failures that have occurred there over the last 20 years. Indeed, there is a perception that some of the work proposed by IMTA has already been tried out in the area.[10] The rigidity and verticality of IMTA projects have also been called into question, the view being that they should be flexible enough to adapt to the real needs of communities (López Ramírez and Martínez Ruiz, 2003). An urgent change of strategy is therefore needed if IMTA is to truly engage with local actors and build on their experience of working in the area.

(iii) *Non-governmental organizations:* these have played an important role in the basin, but at the same time they have become a school for activists from different communities, and this has made community leaders strongly dependent on NGOs. In our opinion, this reduces the potential for truly local initiatives to emerge since, just as communities have been the political clients of parties or the authorities on other occasions, they have now become an important justification for NGOs vis-à-vis their financial backers: the same ties of dependency that were discussed earlier have meant that, after a time, many NGOs cease to be agents of human capital formation and become *gestores* or intermediaries for communities or their projects. Thus, "…the role taken on by groups or leaders of organizations as they involve themselves not just in this relationship, but in the whole disputed terrain of the multiform and complex relationships between local government and citizens, is that of *gestores*. In this way, the intermediary becomes a key social and

[10] A very illustrative example is the IMTA proposal to construct Lorena stoves, when GIRA (the Interdisciplinary Group for Appropriate Rural Technology) has been promoting, constructing and evaluating stoves produced in the area for the last 15 years. Another instance is the proposal for courses in water culture in a basin where people have been overwhelmed with courses, workshops and meetings.

political actor interceding in the relationships between citizens and local government in order to convey demands from the former to the latter and, at the same time, to control the response to these demands" (Treviño, 1999). There is a need to break this dependency and foster local initiatives through organizational networks so that development projects can be implemented.

In this context, local efforts seem to be acquiring a greater and greater presence as opportunities for community self-management. Under these circumstances, which have arisen against a background of increasingly vulnerable and struggling local economies and of migratory processes in which women have come to play a major role formerly reserved for men, it appears that group, neighbourhood and community cooperation and solidarity mechanisms have opened up a gap through which a less uncertain future for communities can be glimpsed.

It is very interesting to note that those heading these organizational efforts in the communities considered have followed very similar paths, both in the way they relate within their communities and in their ties beyond them and the links their organizations have forged with governmental and non-governmental agencies to secure support or financing for their projects.[11]

It makes sense, then, to try to achieve a detailed analysis and a better understanding of how the different types of social capital in the basin communities interact, ascertain their internal and external links, identify their social networks and encourage their growth, so that social capital can be fostered and incorporated into the general processes of government and social participation. This will make it possible to pursue integrated basin management via the prompt formation of community and group structures, resulting in high levels of trust that facilitate engagement and action by all those involved, guided by a rigorous theory of collaborative decision-making (Hooper, 2000).

To achieve this, though, it is essential for there to be a working strategy that channels efforts in ways that really benefit the basin. Our view is that, for a variety of reasons, IMTA is well-placed to activate the potential of social capital:

— IMTA has scientific and technical prestige and is detached from the local dynamics of authoritarian clientelism, political cronyism and government connivance, which means it can act with a degree of impartiality and objectivity to address the environmental problems that need solving.
— The financial support provided to IMTA by the Gonzalo Río Arronte Foundation means it has the chance to set the pace of future work and thus to establish participation mechanisms. We repeat, however, that the organization needs to restructure the mechanisms through which it works with communities.
— Likewise, there is a need to establish rules for a new institutional structure so that all government actions are transversal and the projects implemented have a greater impact on the basin.

Thus, no environmental recovery programme can be undertaken in the Pátzcuaro basin without reference to the social actors living there, and local communities in particular. Accordingly, there can be no guarantee that such a programme will be successful and the environment of the area gradually restored unless the social relationships existing in the communities to be acted upon are treated as valid, since even when organizational efforts exist there it will not be possible to make substantial progress with the measures undertaken if the programme does not recognize the specific dynamics of communities and their self-management processes, or if the whole focus is on dealing with or resolving particular issues while existing networks and positive leadership situations in the region are ignored.

"The key in all this is the extent to which social capital can be scaled up from the microsocial to the macrosocial level. In other words, social capital is a resource possessed not just by individuals in their personal networks, but also by groups and communities, in a different form: that of institutions and complex systems. Economic development depends on the ability to make the transition from a community life based on ties of kinship to societies organized by formal institutions. This means that social capital is present in differing degrees and forms in the institutions of the State, the market and civil society" (Arriagada, Miranda and Pávez, 2004).

A key element in gauging the existing social capital of target groups is the ability of programmes to recognize and respect the track record of communities

[11] Of the leaders mentioned, Guadalupe, Herminia and Tania hold government positions that greatly facilitate their understanding of bureaucratic processes and the work of engaging their communities with government programmes. Odilia, meanwhile, works in GIRA, one of the highest-profile NGOs in the area, and this has enabled her, as she herself puts it, to get a training for the benefit of her community.

in their development initiatives, and then to work from there. To this end, analysis of social capital networks at the local level needs to be capable of discerning between groups or individuals who for whatever reason are forced to cooperate, and those who participate voluntarily on their own initiative and in their own interests.

Consequently, programmes carried out for the benefit of society (such as environmental recovery, community development or anti-poverty programmes) can create, revive or foster social capital only if they specifically set out to do so. If agents of development (non-governmental organizations, governments and outside agencies) really want to work for the benefit of communities and their resources, they will have to turn their attention to new ways of working with society. Otherwise, we will continue to make development a virtual world.

(Original: Spanish)

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